

ISPAI Response to TRAI Consultation Paper on “Regulatory Framework for Promoting Data Economy through Establishment of Data Center, Content Delivery Network and Interconnect Exchanges in India.

Preamble

At the outset, ISPAI would like to take this opportunity to thank Telecom Regulatory Authority of India (“TRAI”) for bringing out this extremely pertinent and important consultation paper on “Regulatory Framework for promoting Data Economy through establishment of Data Centres, Content Delivery Network and, Interconnect Exchanges in India” as the implementation of the same is need of the hour. We appreciate the Authority for its regular efforts for the growth of digital infrastructure in the country.

Q.1: What are the growth prospects for Data Centres in India? What are the economic/financial/infrastructure/other challenges being faced for setting up a Data Centre business in the country?

ISPAI Response –

India is one of the fastest growing Data Centre market and exceeded globally. Indian data centre market is witnessing robust growth in the era of virtualization and cloud computing. The data centre market in India is expected to grow at 12% compound annual growth rate (CAGR) from 2019-2024 according to the Synergy Research Group.

The increased use of data consumption and internet bandwidth in the country is primarily driven by expanding the reach of social media and increased use of smart devices. With more and more Indian companies expected to embark on their digital transformation journeys, McKinsey has identified India as the second fastest-growing digital economy and projected that IT and communications sector will double in size by 2025 to contribute \$ 355-435 billion to the GDP. COVID-19 led lockdown has accelerated the usage of data resulting in increased demand for bandwidth as well as storage capacities. The government, private sector and individuals including a large student base started using digital means to operate their business or profession. The Government of India initiatives such as Digital India and emphasis on self-reliance and data protection through data localization is expected to increase the volume of data in the country, which will result in an increased demand for the data centre and cloud services.

The some of the key contributor of data centre growth:

- a. Rising Domestic Data consumption per subscriber.
- b. Migration from Captive Data Centers to Cloud by Enterprise customer.
- c. Proposed Data sovereignty law.

- d. Geographical Advantage: can act as Data Center Hub for Countries in India Subcontinent.
- e. Technological developments like M2M/IoT, 5G, Applications, growth in OTT Services and increasing adoption of cloud services

Following are few major challenges being faced for setting up a Data Centres: -

- a. Inadequate infrastructure: Unstable power supply and heavy reliance on generators is a major operational task for operators.
- b. Single Window Clearance: It needs to be ensured that timely approvals are accorded and a Single Window Clearance framework needs to be put in place at National Level.
- c. Data Centers have yet not been recognized as a separate category of buildings under the National Building Code
- d. Location and land constraints: land is available at a high cost and there is lack of availability of land at suitable places within the city.
- e. High Initial setting up cost: requires tremendous investment at the preliminary stage due to costly real estate, power infrastructure, water requirement and improving wide area network connectivity.
- f. Policy enablers required –With the presence of strong governments at the state and central level, concerted efforts are needed on several fronts, including creation of single-window clearances, uninterrupted power at affordable costs, 5G rollout, provision of financial incentives, efficient tax structures and stamp duty exemption on land purchase, amongst others.
- g. Lack of required skillset – At present, there is a shortage of skilled labour that is essential for a successful data centre operations.

Q.2: What measures are required for accelerating growth of Data Centres in India?

Q.3: How Data Centre operators and global players can be incentivized for attracting potential investments in India?

Q.4: What initiatives, as compared to that of other Asia Pacific countries, are required to be undertaken in India for facilitating ease of doing business (EoDB) and promoting Data Centres?

ISPAI Response -

In lieu of the impending and ongoing growth of the Data Centre Industry, the government can take the following key measures to further speed up the same.

- a. One Uniform National Policy and Uniform applicability of Policy.
- b. Single Window Clearance: Timebound single window clearances for both pre-commencement and post commencement approvals, a specialized empowered desk for Data Centre projects for smooth clearance of approvals may be considered.
- c. Inclusion under Essential Services: Data centres support 24*7 mission critical services and are a critical enabler of the digital economy.

- d. Government may allocate land parcels for Data Centre on long term lease at a nominal cost.
- e. Stamp Duty charged may be exempted or reduced.
- f. Improving Power Infrastructure for Data Centres.
- g. Promote infrastructure sharing for cost and power efficiencies.
- h. The Government should provide more concessional rate/subsidy in adopting the Sustainable Energy solutions like Solar Panel system to fulfill the industrial power requirement of data centres.
- i. A PLI scheme for manufacturing critical mechanical and electrical equipment used in Data Centers in India would bring significant cost efficiencies and enable India to attract global Data Center players.

Other Incentives to consider;

- GST Holiday: A GST holiday window be considered for Data Centres under for a certain period to boost the investment and accelerate the growth of Data Centres. Also, GST reimbursement for existing operational Data Centres for the same period linked to fixed capital investment may be considered. Further, GST on building works is not eligible presently for Input Tax credit, hence we suggest that the GST component for the entire upfront and recurring capex be reimbursed at 100% for the 1st 5-10 years.
- Property Tax: We suggest that Property taxes for Data Centres should be equalised with residential rates to improve fiscal attractiveness for the operative period of the respective Data Centres. In addition, 100% waiver of property taxes for a specified period may be considered.

Q.5: What specific incentive measures should be implemented by the Central and/or the State Governments to expand the Data Centre market to meet the growth demand of Tier-2 and Tier-3 cities and least focused regions? Is there a need of special incentives for establishment of Data Centres and disaster recovery sites in Tier-2 and Tier-3 cities in India? Do justify your answer with detailed comments.

ISPAI Response -

We recommend the constitution of a central task force to engage with state Governments to sensitize administrators to the benefits of promoting the development of a data centre market within its own state, as well as provide a bunch of incentives suitable for local data centre deployment and management. The same may be affected through the use of a central data centre policy

We also recommend the development of an index to measure data centre readiness and rank states based on availability of supporting infrastructure and forward-looking policies that

improve the incentives to invest in the development of data centres and associated infrastructure.

Q.6: Will creation of Data Centre Parks/Data Centre Special Economic Zones provide the necessary ecosystem for promoting setting up of more Data Centres in India? What challenges are anticipated/observed in setting up of new Data Parks/zones? What facilities/additional incentives should be provided at these parks/zones? Do give justification.

ISPAI Response –

Data Center Parks in Special Economic Zones (SEZs) provide an opportunity of aggregating all components needed for Data Centers and benefit from economies of scale and will also provide benefit of superior and reliable infrastructure. We recommend that the following:

a. Availability of Basic Infrastructure:

The Government must ensure the basic requirements (like access connectivity to location, reliable and scalable power connections, telecom connectivity and secure environment) are well planned and deployed before deciding and operationalizing these Data Center park locations at SEZs.

b. Location of SEZ for Data Center:

The selection of SEZ location for Data Center Park should be decided in active consultation with and inputs from the industry as this is a crucial factor for successful utilization of Data Center facility.

c. Renewable Energy farms:

We suggest that the Data Centre (DC) Parks by default should have associated renewable energy farms dedicated to the data centers to give a push to the renewable energy and reduce the dependency of the data centers on the conventional sources of electricity.

Q.7: What should be the draft broad guidelines to be issued for Data Centre buildings, so as to facilitate specialized construction and safety approvals?

ISPAI Response –

We believe that following key aspects should be considered in the broad guidelines for Data Centers are:

- Design as per Seismic standards
- Load bearing of floors
- Green design consideration
- Different Parking percentage depending on the use case,
- Height and Crash resistance parameter of the wall,
- Minimum benchmarking of physical & Electronic security standards to be deployed
- Integration with nearest fire, police station & hospitals to deal with any threat or untoward incident.

Additionally, we recommend following specific standards to be implemented on a Pan-India level:

- Standardized FSI (Floor Space Index) Norms of >3 or 4
- Restricting Parking norms as per the need (suggested one Car park for every 600 Square meter build)
- Approval for multi-level DG Stacking within the campus (5- 6 levels for DG stacking)
- Online mapping of availability of space and related information at state and centre level

Q.8: Is there a need to develop India-specific building standards for construction of Data Centres operating in India? If yes, which body should be entrusted with the task? Do provide detailed justification in this regard.

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Q.9: Till India-specific standards are announced, what standards should be followed as an interim measure?

ISPAI Response –

Government can consider adopting the global standards (like TIA 942 & Uptime Institute standards), guidelines and benchmarks to develop India-specific building standards for construction of Data Centres.

DoT and MeitY with coordination of Ministry of Housing and Urban Affairs should be entrusted for the enablement of the above framework & Standardisation Testing and Quality Certification (STQC) can be entrusted for the audits as they are already into evaluation & certification of public cloud & Government Cloud Computing (GCC).

Q.10: Should there be a standard-based certification framework for the Data Centres? If yes, what body should be entrusted with the task?

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Q.11: Should incentives to Data Centres be linked to the certification framework?

ISPAI Response –

We submit that TIA 942 & Uptime Institute standards can be used as both are mature standards and are prevalent in India and worldwide

Q.12: Are there any specific aspects of the disaster recovery standard in respect of Data Centres that needs to be addressed? If so, then provide complete details with justification.

ISPAI Response –

We recommend following:

- a. Redundancy of Power and Water Supply: There should be availability of redundant/backup sources of power and water supply. The central/state authorities should ensure that they have necessary infrastructure and policy to provide the same. In this regard, it is pertinent to mention that a few states provide tapping of power only from a single source and a single water connection.
- b. Reliability of Power and Water Supply: It is not only important to provide backup/redundant connections but the connections should be reliable also and preferential treatment (in terms of downtimes) should be accorded to Data Centers since these are critical for uninterrupted functioning of Digital Services.
- c. Right of Way for Connectivity: Lastly, all Right of Way issues need to be resolved for connecting fiber to Data Center and approvals to be accorded on priority for laying fiber for connectivity.

Q.13: Whether trusted source procurement should be mandated for Data Centre equipment? Whether Data Centres should be mandated to have security certifications based on third-party Audits? Which body should be entrusted with the task? Should security certifications be linked to incentives? If so, please give details with justifications.

ISPAI Response –

We believe Trusted Source procurement is applicable only for licensees creating telecom infrastructure under section 4 of India Telegraph act 1885 therefore it is our understanding and recommendation that Data Centre players should be kept out of this ambit.

Q.14: What regulatory or other limitations are the Data Centre companies facing with regards to the availability of captive fiber optic cable connectivity, and how is it impacting the Data Centre deployment in the hinterland? How can the rolling out of captive high-quality fiber networks be incentivized, specifically for providing connectivity to the upcoming Data Centres/data parks? Do justify.

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Q.15: What are the necessary measures required for providing alternative fiber access (like dark fiber) to the Data Centre operators? Whether captive use of dark fiber for DCs should be allowed? If so, please justify.

ISPAI Response – (To Q.14 & Q.15)

We believe dark fiber is considered telecom infrastructure resources which can only be utilized/Lit by the Licensees under section 4 of India Telegraph Act 1885. We also believe multiple TSPs/ISPs are already present in the Data Centres across the country. In the upcoming data centres of scale, there is enough business case for infrastructure roll-out by TSPs/ISPs and NLDOs therefore there is no Regulatory intervention required at the stage in this regard.

Consequently, companies who want to operate Data Centres would have to have commercial agreements with TSPs/ISPs, even if the services they provide are not competing with those being provided by TSPs/ISPs.

Moreover, we want to highlight that TSPs/ISPs and NLDOs have made huge investments to obtain license and create necessary infrastructure to meet the business demands of various enterprise customers. The need of Data Centre is not only to connect various Data Centres with each other, they also require connectivity to outside world as well.

Q.16: What are the challenges faced while accessing international connectivity through cable landing stations? What measures, including incentive provisions, be taken for improving the reliable connectivity to CLS?

ISPAI Response –

With respect to access to international connectivity, we would like to submit that the international connectivity / bandwidth cost is already low due to intense competition in the market. With the increase in the demand and new submarine cables landing in India in near future, the market will take care of the cost of bandwidth and hence there is no requirement to have any regulatory provision.

However, to further improve the international connectivity, the TSPs should be given various incentives (say rationalization in regulatory levies) and simplified approval process of CLS for proliferation of international connectivity.

Q.17: Is the extant situation of power supply sufficient to meet the present and futuristic requirements for Data Centres in India? What are the major challenges faced by Data Centre Industry in establishment of Data Centres in naturally cooled regions of India? What are the impediments in and suggested non-conventional measures for ensuring continuous availability of power to companies interested in establishing Data Centres in the country? What incentivization policy measures can be offered to meet electricity requirements for Data Centres?

ISPAI Response –

Power Supply related challenges:

We have already highlighted that certain states do not allow dual power supply which is necessary for reliable Data Center Operations. Further, unreliability of power supply increases the challenges. Policies to source renewable energy should be simple, cost effective

Data Center in Naturally Cooled Regions:

- a. **Challenges:** As per the topology of India, the naturally cooled regions (such as hilly regions) lack the basic constituents required to plan and run the large data centers. The challenges emanate from:

- Lack of availability of large contiguous land parcels due to terrain of the region
- Lack of robust fiber connectivity, skilled manpower and reliable power supply.
- Limited local demand
- Limited access to such locations

b. Suggestions:

To improve the Data Center penetration in Naturally Cooled regions following provisions can be undertaken:

- Availability of open access to power
- Relaxed norms (such as free RoW etc.) for Telecom Operators,
- Creation of demand by serving States & Enterprise Digital Infrastructure at Data Centers.

On the basis of learnings from such projects, the models can be further evolved with further incentives and additional projects.

Q.18: Should certification for green Data Centres be introduced in India? What should be the requirement, and which body may look after the work of deciding norms and issuing certificates?

ISPAI Response –

- a. Yes, considering the high power consumption, green certification should be made must for Data Centers. The IGBC (Indian Green Building Council) already has a Green Data Centre certification, which looks specifically at Data Centres and uses multiple criteria for adjudging efficiency.
- b. To encourage the adoption of renewable energy, incentives can be rolled for Data Center Operators, in case they exceed the minimum percentage consumption of green energy.

Q.19: Are there any challenges/restrictions imposed by the States/DISCOMs to buy renewable energy? Please elaborate. Please suggest measures to incentivize green Data Centres in India?

ISPAI Response –

- a. No Surcharge (like Cross Subsidy Surcharge and Additional Surcharge) should be levied by States for sourcing of renewable energy by Data Centers.
- b. Banking for renewable energy should be allowed throughout the year and settlement of energy should be allowed on monthly basis irrespective of Time of Day/15 Minutes settlement.

Q.20: What supportive mechanisms can be provided to Data Centre backup power generators?

ISPAI Response –

- a. Govt. should allow the installation of DGs & UPS for smooth operations of Data centres.
- b. Incentives should be given for manufacturing of DGs within India.
- c. Govt. should give fuel subsidies to run backup power sources.
- d. Govt. to ensure uninterrupted/continuous fuel availability
- e. Data Centres DGs should be kept out of ambit of shutdown of DGs in case of issuance of the order/guidelines by competent authorities pertaining to the High Pollution levels

Q.21: Availability of Water is essential for cooling of Data Centres, how the requirement can be met for continuous availability of water to the Data Centres? Are there any alternate solutions? Please elaborate.

ISPAI Response –

In this regard, we would like to submit;

- a. Availability of Secondary Water Connection:** Backup water connections are required for ensuring smooth Data Center Operations. However, it has been observed that certain states as a policy do not allow secondary water line connection. Therefore, as a policy all states should allow more than one water connection for Data Centers.
- b. Bore Well Construction:** To deal with any unforeseen circumstances, construction of bore well should be allowed. It is also suggested that Sewage treatment and rain water harvesting should be mandatorily included in such campuses and their designs.
- c. Incentives for alternate cooling systems:** To build an alternative efficient cooling ecosystem, Liquid based cooling technologies should be promoted/subsidized/ evaluated and deployed to reduce the consumption of water in Data Centers.

Q.22: Whether the existing capacity building framework for vocational or other forms of training sufficient to upskill the young and skilled workforce in India for sustenance of Data Centre operations? What dovetailing measures for academia and industry are suggested to improve the existing capacity building framework, and align it with the emerging technologies to upskill the workforce in India?

ISPAI Response –

Data Centre operations require a diverse range of technical skill sets encompassing multiple engineering disciplines like civil, mechanical, electrical, network, IT/computers etc. Given the growth of the sector, skilled manpower availability is projected to be a major challenge as highlighted by TRAI vide para 2.107 of the consultation paper. Towards this end, many Data Centre operators have created Centres of Excellence inside its Data centres and are pioneering industry-academia collaboration. We are of the view that special incentives be accorded to Data centre operators for promotion of specialized skill development and public-private partnerships in this regard be encouraged.

Q.23: Is non-uniformity in state policies affecting the pan-India growth and promotion of Data Centre industry? Is there a need for promulgation of a unified Data Centre policy in India, which acts as an overarching framework for setting Data Centres across India? What institutional mechanisms can be put in place to ensure smooth coordination between Centre and States for facilitating DC business? Do support your answers with detailed justification.

ISPAI Response –

We see a requirement of a central overarching policy for achieving uniformity and consistency across the state policies prevailing in country and the effective implementation of the policy on the ground.

We recommend that Data Center polices should be mapped to certain central agency or system (similar to a GST council concept) for a better execution on the ground and for regular uniform updates to the policy. This will help in proliferation of Data Centers Pan India and also provide a neutral ground for technology partners and service providers.

Further, the overarching Data Center policy should encompass all the facets of Data Center requirements such as the building norms, enablement of power infrastructure and tariffs, green energy policy, water supply issues, efficient approval processes with provisions of deemed approval, certifications for data centers etc.

Q.24: What practical issues merit consideration under Centre-State coordination to implement measures for pan-India single-window clearance for Data Centres?

ISPAI Response – Please refer our submission to Q. 2 to Q.5 for above issues

Q.25: Is there a need for Data Centre Infrastructure Management System (DCIM) for Data Centres in India? What policy measures can be put in place to incentivize Data Centre players to adopt the futuristic technologies? Elaborate with justification.

ISPAI Response –

Presently, overall data centre management systems, tools and processes are implemented by all Data Centre operators in their data centre assets and are customised as per customer requirements which vary significantly. Hence, a National level DCIM is not necessary as it may hamper the customization of Data Centre resources and systems as per customer's requirement. Instead of a focus on DCIM, due focus should be given for the adoption of technologies like AI/ML and incentivization for the same may be prescribed in the Data Centre policies.

Q.26: What institutional mechanism needs to be put in place to ensure digitization of hard document within a defined timeframe?

Q.27: Would there be any security/privacy issues associated with data monetization? What further measures can be taken to boost data monetization in the country?

ISPAI Response

No Comment

Q.28: What long term policy measures are required to facilitate growth of CDN industry in India?

Q.29: Whether the absence of regulatory framework for CDNs is affecting the growth of CDN in India and creating a non-level-playing field between CDN players and telecom service providers?

Q.30: If answer to either of the above question is yes, is there a need to regulate the CDN industry? What type of Governance structure should be prescribed? Do elucidate your views with justification.

ISPAI Response – (To Q.28,29& 30)

The role of Content Delivery Networks (CDNs) is becoming significant with the increase in the data consumption and explosive growth of OTT platforms in India. However, the CDN Market in India is dominated by Global CDN player. Moreover, dominant Global CDN Players, due to their significant market power, have been able to adversely impact the growth of home grown CDN players. The Global players use their cheaper international routes to deliver a portion of the India traffic to reduce their costs.

Further, we wish to highlight that the large Global Cloud Service Providers control a significant part of the CDN market chosen by Indian customers, who are opting for Cloud services along with CDN Services. This is due to the fact that most of the large global Cloud Service Providers, are having their own CDN services too and they prefer to sell the same as integrated service along with Cloud Services. These large Cloud Service providers, either bundle their own CDNs with their cloud services or provide the international CDNs as their choice of CDN partner. This market practice restricts the customer to avail the services, without leaving any choice for them to opt for the customer's preferred CDN Service provider. Indian CDN providers are not typically empanelled with the large Cloud service providers and/or the barrier to entry is too high to get empanelled with large Cloud Service providers who prefer to promote their own CDN services.

In view of above business practices adopted by Global CDN players, we strongly recommend that a light touch regulatory framework having registration mechanism in place for CDN services should be introduced which would help in creating level playing field for local CDN players.

We suggest the following policy and regulatory measures are required for orderly growth of Indian CDN players:

Geo specific regulations: CDN service providers should be subjected to a very light touch regulatory regime in India so that some kind of level playing field is established between

Global CDN players operating in India vis-à-vis India based CDN players. In the era of atma-nirbhar Bharat and vocal for local, there is need to promote local CDN players for vast Indian content which is being created. Therefore, there is a need for light touch regulatory framework wherein Registration of CDN players should be mandated with DoT as is being done in case of M2M Service Providers.

Cloud Service Providers: Regulation should provide large Cloud Service Providers to also promote Indian CDNs along with their empanelled CDNs and provide level playing field to India based CDN Providers. Soft -touch regulatory support is required for guiding Global Cloud Service Providers, to ensure empanelment of Indian CDN Service Providers and flexibility should be there for the end customer to either opt for an empanelled CDN provider or bring its own preferred CDN provider as they give a bundled offering to their Indian customers.

Network: There is also need for intervention required for necessary guidance for India MNOs to support Indian CDNs Service Providers for caching nodes and capacities on equal terms & conditions as offered to the International CDN Service Providers.

Content Generation and Traffic Delivery: There is a need for policy intervention for ensuring that for the content generated and delivered in India, Customer should be mandated to leverage 50% of CDN services from an India originating CDN Service Providers to promote the orderly growth of Indian CDN Market. Further, it is also required to ensure that domestic content should not be routed outside India via CDN networks and then re-routed back to India.

Q.31: In case a registration/licensing framework is to be prescribed, what should be the terms and conditions for such framework?

ISPAI Response –

Light touch Regulation Focused to take care of matter / contents pertaining to national security, protection of minors / human dignity/ privacy, intellectual property etc. As suggested in our response to Q.28-30, a light touch regulatory approach should be prescribed for the CDN services in form of registration/authorization which would outline the necessary terms and conditions for operating a CDN services in India.

Regulation may also envisage that CDNs would provide peering / caching arrangement to all eligible service provider in non – discriminatory way and vice-a -versa.

Q.32: What are the challenges in terms of cost for growth of CDN? What are the suggestions for offsetting such costs to CDN providers?

ISPAI Response –

A CDN will typically require investment in building a Software stack and Rack, Power, Space and Hardware. These are available in India at fair prices, and CDNs have choices amongst

various data centre providers for rack, space and power. So, in our opinion there is no major challenges in terms of cost for deployment of CDN services.

We would also like to submit that the connectivity charges i.e., NLD charges and DLC (P2P) link charges are not a barrier or a constraint for any ISP to connect with the CDNs or IXs at the data centre. In India, the NLD services are highly competitive due to the presence of integrated service providers (having access services, ISP, NLD, ILD licenses/authorizations) and stand alone NLD service providers. Also, in the last exercise conducted by TRAI to review the DLC tariff, the existing ceiling has already been reduced substantially. Moreover, in major centres, TRAI had itself observed that the tariffs were offered at highly discounted rates. Hence, we do not see the NLD/DLC tariffs as a constraint in the growth of CDN services in India.

In fact, the Indian CDN players, who are also Category A ISPs, are facing challenges in terms of getting the collocation services in the POP's of other MNOs due to the entry barrier created for competition reason. While Global/foreign based dominant CDNs /Cloud Service Providers are given collocation and access by local MNO at a preferential price or at no cost, the same treatment is not been extended to Indian CDN players thereby creating a non-level playing field. This puts Indian CDN players at a disadvantageous position in the Indian CDN market against International CDN providers who are encouraged to co-locate their CDN PoPs within MNOs Data Centers or networks. Hence, we suggest that the regulatory framework for CDN should ensure the level playing field and non-discriminatory treatment by the MNOs towards Indian CDN players.

Q.33: Do you think CDN growth is impacted due to location constraints? What are the relevant measures required to be taken to mitigate these constraints and facilitate expansion of ecosystem of Digital communication infrastructure and services comprising various stakeholders, including CDN service providers, Data Centre operators, and Interconnect Exchange providers expansion in various Tier-2 cities?

ISPAI Response –

TRAI has rightly pointed out on the issues such as need for large and uninterrupted power supplies; availability of fiber network and necessary ecosystem are challenges in the growth of CDN business in tier-2 locations. Thus, incentive schemes should be given to set up the requisite infrastructure to facilitate the expansion of ecosystem of Digital Communication Infrastructure and services like CDN in tier 2 cities. These incentives can be in terms of nominal RoW cost for laying of fiber network, incentivizing the TSPs/ISPs in terms of License fee on the revenue earned through their fixed network, subsidized electricity price and exemption of 100 percent electricity duty from state electricity board and making available the land, water etc. at subsidy to the investors who would create necessary infrastructure to facilitate the CDN services in India's tier-2 cities

Q Q.34: What measures can be taken for improving infrastructure for connectivity between CDNs and ISPs, especially those operating on a regional basis?

ISPAI Response –

As submitted in our previous response to Q 33, the incentives in terms of ROW cost and license fee payable on the revenue from the fixed network should be implemented to improve the infrastructure connectivity and proliferation of broadband so that the connectivity between CDNs and ISPs can be improved at regional level (tier-2, tier-3 cities)

Q35: Is there a need to incentivize the CDN industry to redirect private investments into the sector? What incentives are suggested to promote the development of the CDN industry in India?

ISPAI Response – No comments

Q.36: How can TSPs/ISPs be incentivized to provide CDN services? Please elucidate your views.

Q.37: Are there any other issues that are hampering the development of CDN Industry in India? If there are suggestions for the growth of CDNs in India, the same may be brought out with complete details.

ISPAI Response –

The initial costs associated with establishing a CDN are quite high, while it takes time to get the returns on investment. Private investments are required to set up a large number of CDN servers in India. Private investments are required to set up a large number of CDN servers in India. Suitable fiscal incentives through policies can support the companies during initial investment.

Since CDNs are a popular choice to relieve some of the major pain points that come with traditional web hosting, it immensely benefits to end users (both consumers & enterprises). Indian origin CDNs are very few and have strong competition from Global CDN Service Providers. The large International (Global) CDN Service providers dominate the Indian CDN market due to the significant market power, have been able to adversely impact the growth of home grown CDN players. They have economies of scale due to which they are able to take much more business from International OTT players and India OTT players.

In view of the above, we are of the view that Indian origin CDN players need to be incentivized and should be protected from the non-level playing being created. If an ISP providing CDN services, then the said ISPs should be allowed equal access of co-location facilities by the MNOs as they provide such access to large CDN players. Thus, A light touch regulatory framework having registration mechanism should be in place for CDN services would help in creating level playing field for local CDN players.

We are of the view that Indian origin CDN players need to be incentivized and should be protected from the non-level playing being created. If an ISP providing CDN services, then the said ISPs should be allowed equal access of co-location facilities by the MNOs as they provide such access to large CDN players. Thus, A light touch regulatory framework having registration mechanism should be in place for CDN services would help in creating level playing field for local CDN players.

Q.38: Do you think that presently there is lack of clear regulatory framework/guidelines for establishing/operating Interconnect Exchanges in India?

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Q.39: What policy measures are required to promote setting up of more Internet Exchange Points (IXPs) in India? What measures are suggested to encourage competition in the IXP market?

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Q.40: Whether there is a need for separate light-touch licensing framework for operating IXPs in India? If yes, what should be the terms and conditions of suggested framework? Do justify your answer.

ISP AI Response –

We believe that in India, there is clear Regulatory framework consisting of two entities- ISPs and customers. All the internet traffic is required to flow through the network of ISPs. In this regard, Internet Exchange Points can facilitate the peering of ISPs at a common place or facility on the terms mutually negotiated terms, Therefore, role of Internet Exchange Points should be limited to providing facility (Data Center) and passive infrastructure to facilitate peering between ISPs. However, there should no direct peering between two content networks.

The role of the exchanges in this framework should be to provide only a common location or a colocation place (i.e. asking a Data Center facility) where different ISPs can place their equipment to peer with each other on the commercial conditions mutually agreed. The footprint of such exchanges should be increased so as to optimize the access cost for ISPs and for having more options.

But it is important that such exchange points should only enable the peering arrangements among ISPs at mutually agreed commercial models, and thus the exchange should be restricted to provide only colocation and related infrastructure. By no means, the scope of such IXPs should be made to cover the services provided by the ISPs.

However, we must highlight that while some companies are operating IXPs under the Companies Act only, whereas others are operating IXPs under a Telecom License. Obligations of both these are very different.

We are of the view that there is no need for separate regulatory framework for operating IXPs in India and can be facilitated under same regulatory framework as ISPs. Only valid Licensed Service Providers having UL-ISP / Standalone ISP Licenses can establish and operate Internet Exchanges in India ensuring unbiased peering, interconnection and security.

There is a need to ensure that there is a level playing field between the ISPs/UL ISPs who are establishing and operating Internet Exchanges in India and other ISPs/UL-ISPs providing only internet service in India.

Some of the key aspects related to level playing field, national security issues and compliance by the Internet Exchange (IX) operators that shall be complied by the IX operators in similar way as by other ISPs/UL-ISPs are as follows:

- License Fee and Revenue Share as applicable for other ISPs/UL-ISPs.
- All Tax related compliances since settlement free peering is not allowed in India.
- National security related compliances:
 - Lawful Intercept and monitoring requirements.
 - Compliance to URL blocking instructions from DoT and various law enforcement agencies from time to time.
 - Compliance to Cyberthreat and other requirements from CERT-IN.
 - NATTING, Syslog, CDR, CAF & KYC related requirements.
 - surprise on premise visits for Bonafide use of service, privacy and security etc
 - Other reporting, DoT & Term cell inspection and audit requirements.
- Any national security related compliances arising due to ISPs without CDOT LIM and/or International Internet gateway doing peering at the IX platform with a non-ISP entity without having required mechanism to monitor the internet traffic as required under the ISP license guidelines connected at the IX platform and exchanging the traffic at the IX platform.
- Not allowing Foreign ISPs/Telcos to connect to the IX platform with ISPs who don't have CDOT LIM/International Gateway. Currently only those India ISPs who have CDOT LIM and /or International Gateway can connect to an Internet Port outside India.
- Any other regulatory & tax compliances as peering between ISPs and non-ISP entities (ISP peering with OTTs/CDNs/ Enterprises is not allowed in India)
- Current interconnection/internet peering of entities (unlicensed or licensed with no LIM or International Gateway) with non-gateway license ISPs, internet exchanges and foreign telecom operators connecting at the IX platform has very high chances of internet traffic going unmonitored to the end users in India thus posing a very serious national security threat as well as pilferage of revenue to govt. exchequer.

Q.41: What business models are suitable for IXPs in India? Please elaborate and provide detailed justifications for your answer.

ISPAI Response –

The business model permissible shall be under the ambit and subject to ISP/UL-ISP licence guidelines and authority shall ensure a level playing field between operators providing Internet Exchange Service and other ISPs/UL-ISPs providing internet services in India. Thus, IXP providers can operate in any business model provided that they are within the regulatory and licensing framework.

Q.42: Whether TSPs/ISPs should be mandated to interconnect at IXPs that exist in an LSA? Do justify your response.

ISPAI Response –

TSPs/ISPs must not be mandated to interconnect at the IXPs that exist in an LSA or anywhere in India.

TSPs/ISPs are providing Internet Services in India under ISP/UL-ISP/UL-Access licenses and are subject to compliance of the terms of these licenses. TSPs/ISPs have invested and continues to invest millions of dollars in capex and opex to build the internet network and associated infrastructure across India and within the city/metro/LSA and beyond. TSPs/ISPs are providing Internet Service to various downstream ISPs, Enterprises, OTTs, CDNs etc and this is the sole source of revenue for them which they reinvest to grow the internet network and infrastructure network in India and beyond and thus being the most critical entity in the entire internet ecosystem to help proliferate the internet and digital economy in India.

Internet ecosystem best grows, proliferate and evolves without any regulatory interference under the ambit of market forces and free economies. Buying or selling internet services by TSPs/ISPs and/or peering between TSPs/ISPs/IXPs is subject to market forces and bilateral technical & commercial considerations among themselves and is purely based upon mutual benefit among the parties. Any such mandate will also create non level playing field at the cost of TSPs/ISPs and will be grossly unfair and uncompetitive. TSPs/ISPs will have no incentive to continue to invest in internet network and infrastructure in India and such move will be counterproductive and against the core spirit vis a vis objective of this consultation paper to grow data and internet economy in India.

Q.43: Is there a need for setting up IXP in every state in India? What support Govt. can provide to encourage setting up new IXPs in the states/Tier-2 locations where no IXPs exist presently?

ISPAI Response –

There are several TSPs/ISPs providing internet services at national, state and city level. Setting up of IXPs in every state in India or otherwise shall be solely based upon the market

requirement and techno commercial viability. Government must ensure level playing field between TSPs/ISPs providing internet services and ISPs/UL-ISPs setting up Internet Exchanges and let the market dynamics play its role in creating the necessary infrastructure and setting up of IXP at various locations in India.

Q.44: Whether leased line costs to connect an existing or new IXP is a barrier for ISPs? If yes, what is the suggested way out? What are other limitations for ISPs to connect to IXPs? What are the suggestions to overcome them?

ISPAI Response –

No, leased line costs to connect an existing or new IXP is not a barrier for ISPs. ISPs can exchange traffic with internet by various means including buying internet service from its upstream ISP/TSP and/or doing peering with other ISPs/TSPs, apart from directly connecting at a valid IXP. ISP can also set up its own last mile infrastructure or set up its IP PoP at the IX point. Thus, an ISP has various means to connect to internet and exchange traffic and the decision depends upon the various technical and commercial considerations.

Hence, we are of the view that there is no such barrier exist in order to connect with the IXP for any ISP in India and this should be left to the ISPs to decide their option to interconnect with an IXP.

Q.45: Is the high cost of AS number allocation an impediment for small ISPs to connect to IX? If yes, what is the suggested way out? Q.46: What other policy measures are suggested to encourage investment for establishing more number of IXPs? Any other issue relevant with IXP growth may be mentioned.

ISPAI Response –

Yes, high cost of AS number and IP addresses allocation is an impediment for small ISPs to connect to Exchange.

NIXI is a not for profit Organization under section 8 of the Companies Act 2013. It was set up to support Ecosystem of Indian Internet. However due to high charges by NIXI for IP resources discourages the ISPs to connect with NIXI.

We suggest that there should be low cost for IP addresses and for same NIXI can include administrative cost and marginal profit for development and expansion for calculating the cost of IP. It will encourage more ISPs to connect with the Internet Exchange.

Q.46: What other policy measures are suggested to encourage investment for establishing more number of IXPs? Any other issue relevant with IXP growth may be mentioned.

ISPAI Response –

We suggest there should be more number of IXPs and there should be more number of PoPs so that more ISPs can connect and contribute for Internet & Broadband Proliferation in the country.

Q.47: How can the TSPs empower their subscribers with enhanced control over their data and ensure secure portability of trusted data between TSPs and other institutions? Provide comments along with detailed justification.

ISPAI Response – No Comments

Q.48: What is the degree of feasibility of implementing DEPA based consent framework structure amongst TSPs for sharing of KYC data between TSPs based on subscriber’s consent?

ISPAI Response – No Comments

Q.49: Are there any other issues related to data ethics that require policy/regulatory intervention apart from the issues that have already been dealt with, in TRAI’s recommendations on the issue of ‘Privacy, Security and ownership of the Data in the Telecom Sector’ dated 16th July 2018 and the draft PDP Bill? Provide full details.

ISPAI Response – No Comments

Q.50: Stakeholders may also provide comments with detailed justifications on other relevant issues, if any.

ISPAI Response – No Comments
